



IWMA - Projects

By

**Suresh Manoharan, Executive Committee
Member**

**Sivaraman. K, Honorary Advisor – Projects
Madhan, Assistant Manager, IWMA**

IWMA – Original Purpose (2002)

- To establish first Common Hazardous Waste Storage, Treatment and Disposal Facility (CHWSTDF) through a service provider for industries in Tamil Nadu.
- To supervise the operation of CHWSTDF.



After AGM2015 – Redefining Itself

**IWMA - To assist its members in
solving their environmental issues by
becoming a**

Knowledge Hub.



Knowledge Hub

By involving itself in solving environmental issues for:

- **Individual member units**
- **Sector issues**

Knowledge Hub

By associating itself with

- **Academic Institutions**
 - IIT – Madras
- **Research Institutions**
 - CLRI, Chennai
 - NIOT, Chennai
- **Consultants**
 - WAPCOS, Chennai



Completed Projects

Freudenberg Performance Materials

Sector: Woven material manufacturer

Location: Chennai

Size: Large (Turnover > 25 Crore)



Issue:

Removal of suspended solids and colloidal solids without the application of conventional filters.

Elevated Solar Evaporation Pan (ESEP)

Background:

- In ETP, Solar Evaporation Pan (SEP) is one of the components which is used to dry the final reject.
- If the SEP is built directly on the ground, there is a possibility that concentrated effluent present in SEP might leak through the cracks developed in the SEP floor.
- Since SEP is built on the ground, it is not possible to verify whether any leakage is happening.

Elevated Solar Evaporation Pan (ESEP)

Background:

- Hence, State Pollution Control Boards have started insisting to build Elevated Solar Evaporation Pan (ESEP) which is at least 1.2 meters above the ground level.
- This elevated structure will ensure that any leakages in the ESEP can be easily identified and hence can be rectified.

Elevated Solar Evaporation Pan (ESEP)

Background:

Since the purpose of the ESEP is to dry concentrate effluent and has no other use for the industry, we need to have a civil structure which is optimal in **structural requirement and cost.**



Elevated Solar Evaporation Pan (ESEP)

Partner Institution:

IIT - Madras

Resource:

**Ms. Rajeswari Jupalli,
B.Tech- Civil Engineering**

Guide:

Prof. Devdas Menon.

Elevated Solar Evaporation Pan (ESEP)

Project Outcome:

- **850 ESEP civil designs for combinations of**
 - Height (H)
 - Breadth (B)
 - Length (L)
 - Soil bearing capacity (SBC)

All designs were done as per method IS 456:2000, including serviceability checks.

Projects Under Execution

Project - I

Sector: Textile Dyeing Industry

Location: Erode

Size: Micro (Turnover < 1 Crore)

Project - I

Problem Statement:

- RO and UF gets frequently damaged due to increased concentration of COD, BOD and TSS.
- Due to higher RO reject, higher cost incurred in the operation of mechanical evaporator.

Action Items:

- Need to achieve higher reduction in COD, BOD and TSS; and hence increase RO recovery.

Project - I

Month	Milestones	Status
May 2016	Meeting between CLRI, IWMA and Industry Member	Completed
Jun 2016	Site visit and effluent sample collection	Completed
Jun 2016	Two successive lab trials conducted at CLRI for the effluent sample	Completed
Jul 2016	Final reports with the proposed scheme for treatability of the effluent was submitted by CLRI	Completed
Aug-Sep	Discussion of the proposed scheme with the industrial member and reviewing the feasibility of implementing the scheme at the site	Under progress



Project - II

Sector: Textile Dyeing Industry

Location: Erode

Size: Micro (Turnover < 1 Crore)

Project - II

Problem Statement:

- Ash is generated from the use of wood in boiler.
- Storage and proper disposal of the ash is being problematic.

Action Items:

- Need to find cost effective disposal method for wood boiler ash.

Project - II

Month	Milestones	Status
May 2016	Preliminary discussion with CLRI and client	Completed
June 2016	Site visit and two sample collection & two lab trials at CLRI	Completed
July 2016	Display of lab scale brick before IWMA – EC	Completed
Sep 2016	Submission of final report by CLRI	Under progress



Project - III

Sector: Welding Rod Manufacturer

Location: Chennai

Size: Large (Turnover > 25 Crore)

Issue:

- **Generation of excess sludge during treatment of metal treated effluent.**
- **Client wishes to reduce the sludge generation.**

Project - IV

Sector: Textile Dyeing Industry

Location: Erode

Size: Micro (Turnover < 1 Crore)

Issue:

- **Higher MLSS growth leading to escape of biological mass and leading to bio fouling of RO.**

Project - V

Sector: Automobile component manufacturer

Location: Chennai

Category: Large (Turnover >25 Crore)

Issue:

- **The waste water is acidic in nature (negative pH) contains iron metal as a major pollutant.**
- **Client wishes to recover spent acid.**

Marine Disposal of Residual Salts

Sector: Textile processing industries

Issue:

In textile dyeing effluent, the following are recovered:

- **Water through RO permeate**
- **Water through evaporator condensate**
- **Reusable grade salt from crystallizer / centrifuge**

Marine Disposal of Residual Salts

- **The last and final reject is converted into non-reusable salt.**
- **It contains salts like sodium chloride, sodium sulphate, calcium / magnesium carbonates, along with some amount of organic dye residues.**

Marine Disposal of Residual Salts

This non-reusable salt sludge can neither be sent to:

- **CHWTSDF because solubility is more than 20%**
- **Co-processing in cement klin because of high salt content.**



Marine Disposal of Residual Salts

Potential Option:

Marine disposal of residual salts.

Precedence:

Marine disposal of brine solution (i.e. salt solution) both in Tamil Nadu and other states.

Marine Disposal of Residual Salts

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Marine disposal of residual salt



Precedence:

Marine disposal of brine solution (i.e. salt solution) both in Tamil Nadu and other states.

Marine Disposal of Residual Salts

IWMA approached IIT Madras.

Title: *Feasibility study on marine disposal of salt generated from textile effluent treatment plants*

Resource Person:

Dr. Ligy Philip,

Professor, Department of Civil Engineering,

IIT Madras.

Industrial Waste Management Association



Marine Disposal of Residual Salts

Scope of Study:

Preparation of Feasibility Report to be submitted to Tamil Nadu Pollution Control Board (TNPCB)

- **Recommendation on feasibility of marine disposal of salts.**
- **Recommendation of possible pre-treatments for salts, if needed.**



Marine Disposal of Residual Salts

Study Result:

- **Marine disposal of the salts will not have any significant toxic effect on the marine ecological systems.**
- **Moreover, the concentrations available will be many fold lower than that employed in the studies due to enormous dilution that can occur during the disposal.**

Marine Disposal of Residual Salts

Month	Milestones	Status
Sep 2015	Submission of 8 samples from IETP and CETP	Completed
Nov 2015	Completion of Feasibility Report by Prof. Dr. Ligy Philip, IIT Madras	Completed
Dec 2015	Fixing meeting with the Tamil Nadu Pollution Control Board	Completed
Feb 2016	Meeting with TNPCB Chairman, Member Secretary, JCEEs along with Prof Ligy Philip at TNPCB-Head Office.	Completed
Mar 2016	Meeting with National Institute of Ocean Technology, Chennai	Completed

Marine Disposal of Residual Salts

Month	Milestones	Status
Mar 2016	Meeting with National Institute of Ocean Technology, Chennai	Completed
Mar 2016	Meeting with WAPCOS	Completed
Apr 2016	Meeting with TNPCB Chairman to brief the project progress	Completed
Jun 2016	Proposal submission by WAPCOS	Completed
Sep 2016	Order issued to WAPCOS for PFS	Completed
Mar 2017	Submission of Pre-Feasibility Report by WAPCOS	Under Progress

Projects In Pipeline

Projects In Pipeline - I

Sector: Home appliances manufacturer

Location: Chennai

Category: Large (Turnover >25 Crore)

Issue:

- **Food waste management (350 kg of food waste generated per day).**
- **Client wishes to find option for utilizing the food waste for power generation.**



Projects In Pipeline - II

Sector: Automobile component manufacturer

Location: Chennai

Category: Medium (Turnover 10-25 Crore)

Issue:

Like to treat and recovery spent hydrochloric acid and sulphuric acid, contaminated with metals like iron, zinc and chromium.

Projects In Pipeline - III

Sector: Textile screen printing.

Location: Erode

Category: Micro (Turnover <1 Crore)

Issue:

Silicate reduction in printing effluent.

Projects In Pipeline - IV

Sector: Automobile Parts manufacturing

Location: Madurai

Category: Medium (Turnover 10 – 25 Crores)

Issue: Phenol recovery and reduction of COD in the effluent

Conclusion

Conclusion

- IWMA
- Member Industries
- Industry Sector Champions
- Academic Institutions
- Research Institutions
- Consultants



If we can put our minds and heart together,
definitely we can make IWMA, a

Knowledge Hub.

Thank You !